

Space Weather Forecast

Issued on Tuesday, 03 May 2022 at 13:02 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: No significant geomagnetic activity. Likely increasing chance of R1-R2 blackouts from region transiting southeastern limb.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has reached Moderate levels with an impulsive low level Moderate flare at 03/0753UTC. This originated from a returning active region (currently transiting the southeast limb), which produced a strong flare on the previous rotation, and appears to still be significantly active, producing several other Common-class flares in the last 12 hours or so. This region is likely to increase flare probabilities once it can be fully assessed as it rotates into view. Otherwise, the five numbered sunspot regions currently on the visible disc are all relatively simple and benign at present.

A number of CMEs were observed being emitted from the farside of the Sun, but none of these have been assessed as Earth-directed.

Solar Wind / Geomagnetic Activity: The solar wind has been slowly declining from slightly elevated to near ambient levels as the Earth moves away from a region of faster solar wind. The total magnetic field and the north-south component have been weak. Geomagnetic activity was Quiet (Kp 0 to 2).

Energetic Particles / Solar Radiation: No solar radiation storms were observed during the last 24 hours.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be mainly Low, but with an increasing chance of further Moderate class flare activity from a returning active region currently transiting the southeast limb.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are currently forecast. The fast solar wind from coronal hole 78 continues to gradually wane, with solar winds gradually settling near slow/ambient levels. There are no further coronal hole connections forecast in the next four days. Geomagnetic activity is expected to be initially Quiet, with isolated Unsettled intervals, becoming Quiet through the period.

Energetic Particles / Solar Radiation: Solar radiation storms carry a slightly raised chance of passing S1 at first, due to the presence of numerous active regions narrowly over the western solar horizon, however this risk should soon reduce to background.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	Yes	10	10	10	10
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)